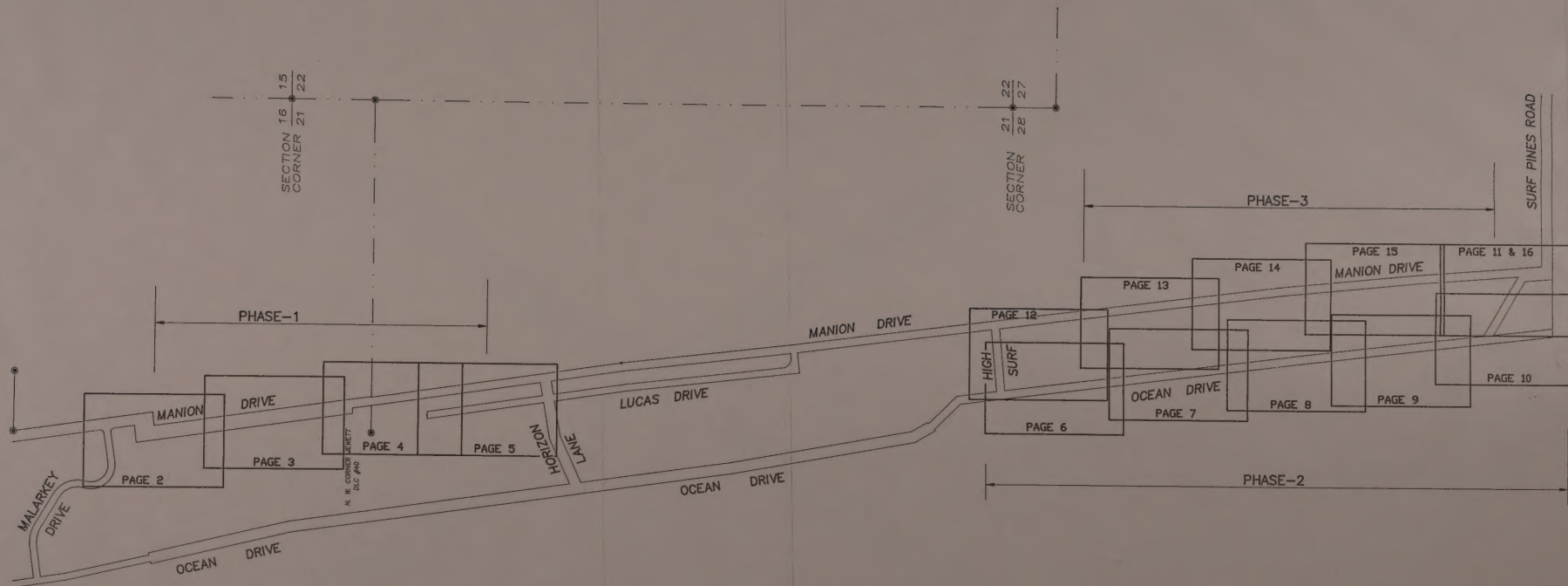


SCALE: 1" = 400'



REVISIONS 12/31/98

CITY OF WARRENTON
SURF PINES WATER DISTRICT

J.B. RANKIN ENGINEERING
P.O. BOX 187 WARRENTON, OR. 97146
(503) 861-0779

1997-1998 WATERMAIN UPGRADES
OCEAN DRIVE AND MANION DRIVE

SCALE: 1" = 30'

MALARKEY DRIVE

MANION DRIVE

STA 1+70
BEGIN CONSTRUCTION, SEE DETAIL

2476A MANION DRIVE
MARTIN

GRAVEL DRIVEWAY

STA 2+00 **MISPLG**
INSTALL 8x4 FLOWM TEE AND 4" FLOWM J
GATEVALVE. CONNECT TO EXISTING 4" WATERLINE
ONCE THIS SECTION OF NEW WATERMAIN IS
COMPLETED, CHLORINE DISINFECT CONNECTING
PARTS.

EXISTING WATER SERVICE
TO BE CONNECTED UPON
COMPLETION OF THE WATERMAIN,
SEE DETAIL.

GRAVEL DRIVEWAY

2477 MANION DRIVE
HASS

PPM 180684

A/C DRIVEWAY

2413 MANION DRIVE
CLINE

A/C DRIVEWAY

IT IS REQUESTED THAT THE
CONTRACTOR TAKE CARE NOT
TO DAMAGE THE BUSHES
AT THIS LOCATION.

EXISTING WATER
SERVICE LINE

TYPICAL SITUATION IN
WHICH THE WATER SERVICE
CONNECTION WILL HAVE TO
BE MOVED TO THE OTHER
SIDE OF THE NEW WATERMAIN

2418 MANION DRIVE
SANTOS

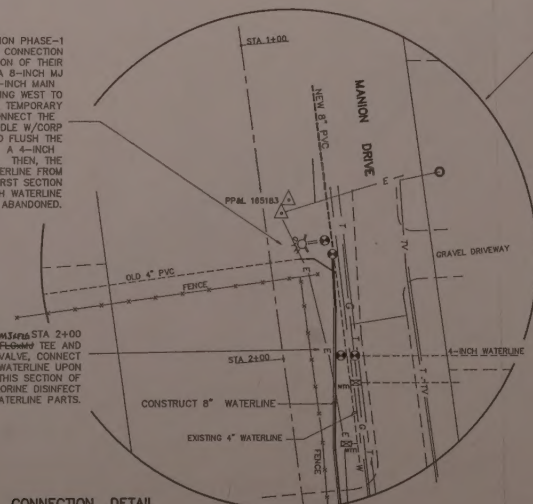
2418 MANION DRIVE
CAPRI

OLD 4" PVC
WATERLINE

MATCH LINE
PAGE 3 OF 17

DETAIL

STA 1+70 BEGIN CONSTRUCTION PHASE-1
THE CITY OF WARRENTON MADE A RECENT CONNECTION
TO THE SURF PINES SYSTEM WITH THE EXTENSION OF THEIR
8-INCH WATERMAIN, SET A FIRE HYDRANT, SET A 8-INCH MJ
GATEVALVE, AND THEN CONNECTED THE MANION 4-INCH MAIN
TO THE 8-INCH GATEVALVE. THE 4-INCH LINE GOING WEST TO
OCEAN BLVD WAS CUT OFF. IN ORDER TO MAINTAIN A TEMPORARY
WATERLINE LOOP, THE CONTRACTOR WILL RE-CONNECT THE
4-INCH LINES WITH A 4-INCH GATEVALVE AND A 4x1 SADDLE W/2009
STOPS ON EITHER SIDE OF THE GATEVALVE IN ORDER TO FLUSH THE
LINES, CHLORINE DISINFECT ALL WATERLINE PARTS. A 4-INCH
GATEVALVE ON OCEAN BLVD NEEDS TO BE OPENED. THEN, THE
CONTRACTOR CAN START LAYING NEW 8-INCH WATERLINE FROM
THE 8-INCH GATEVALVE. UPON COMPLETION OF THE FIRST SECTION
OF NEW WATERMAIN FROM 1+70 TO 10+10, THE 4-INCH WATERLINE
WILL BE ABANDONED.



CONNECTION DETAIL

SCALE: 1" = 20'

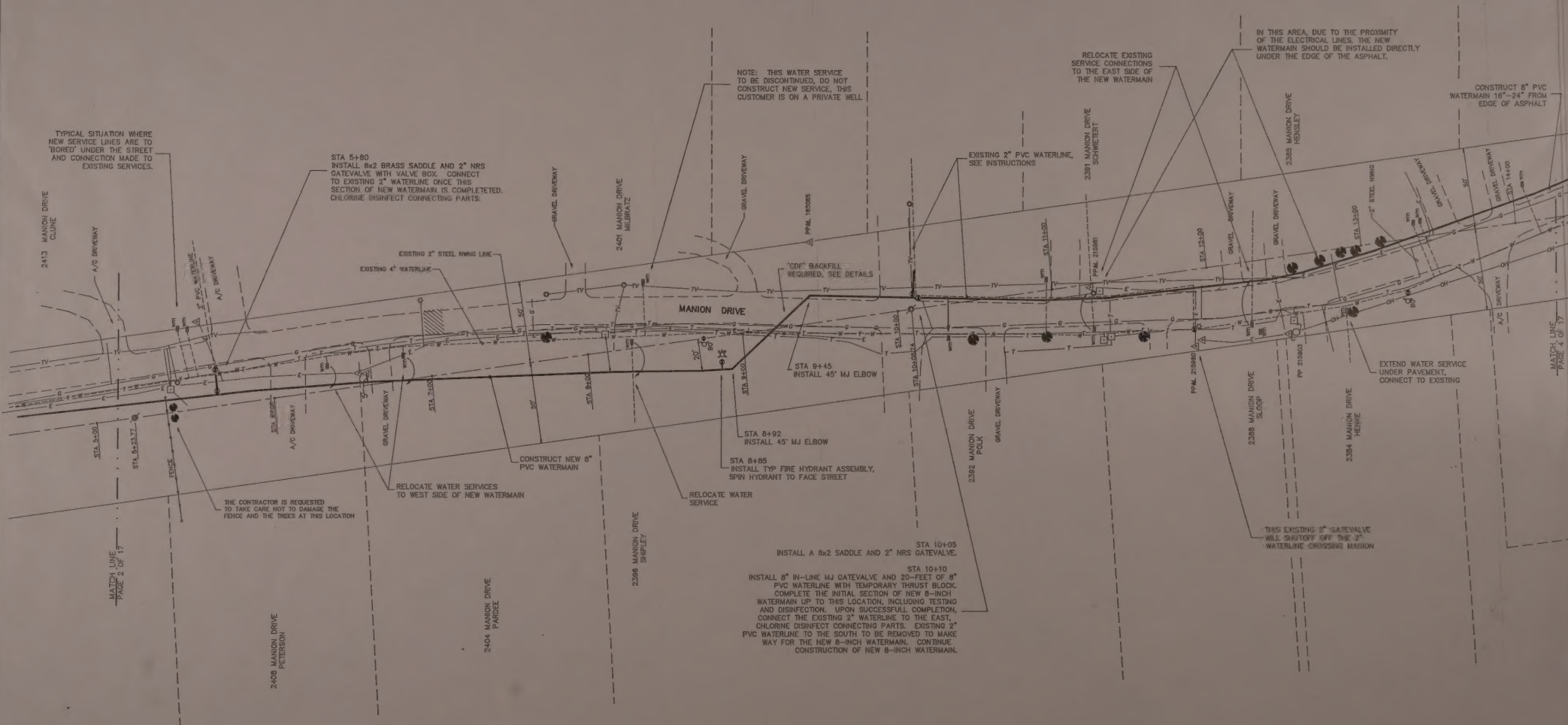


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CITY OF WARRENTON SURF PINES WATER DISTRICT	
JB RANKIN ENGINEERING, Inc. P.O. BOX 187 WARRENTON, OR. 97146 (503) 861-0779	
PHASE-1 MANION DRIVE WATERLINE UPGRADE	
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FILE: SURF9715

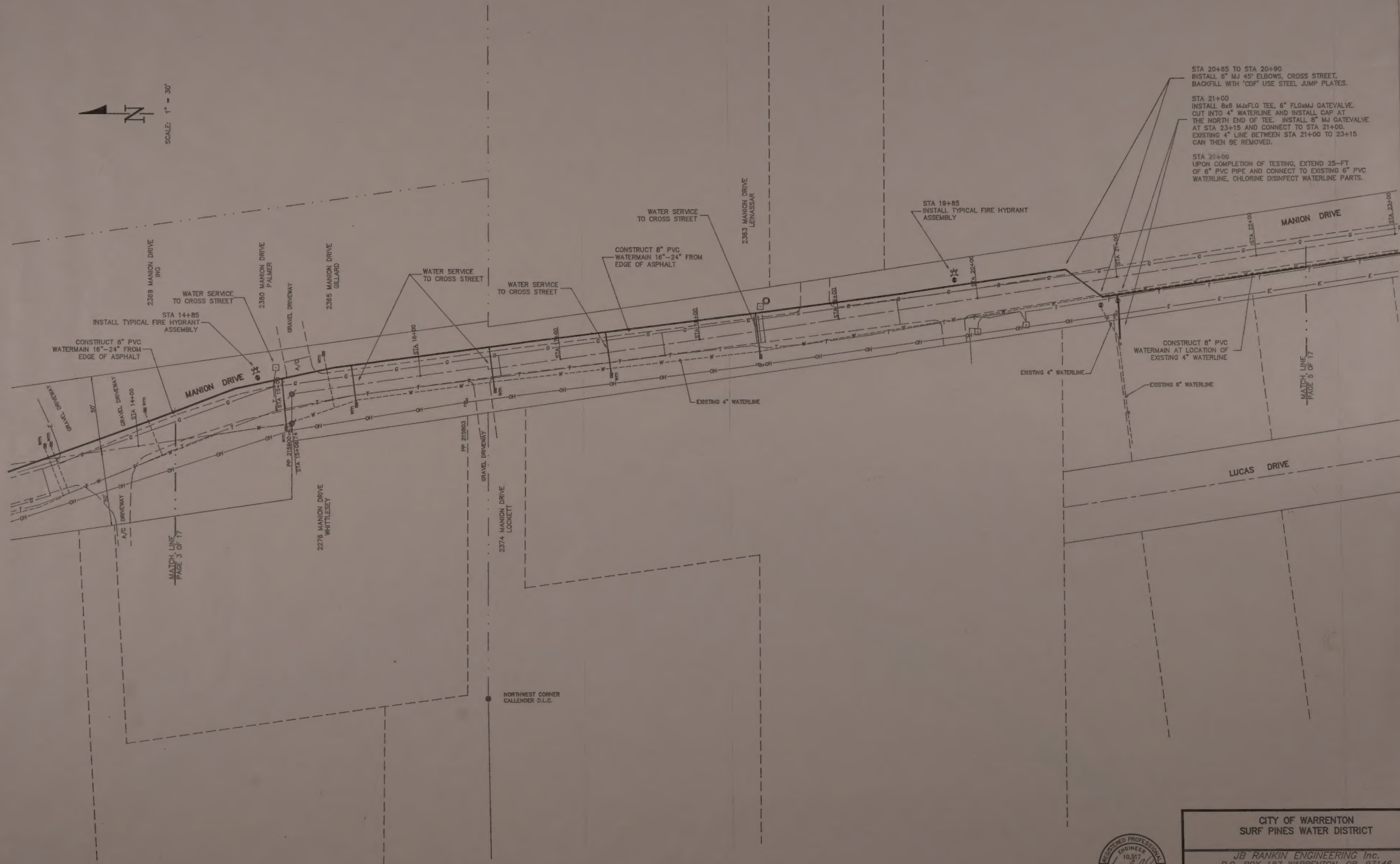
SCALE: 1" = 30'



CITY OF WARRENTON SURF PINES WATER DISTRICT	
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PHASE-1 MANION DRIVE WATERLINE UPGRADE	
REVISIONS 12/31/98	FILE: SURF9714



SCALE: 1" = 30'



STA 20+85 TO STA 20+90
INSTALL 8" MJ 45° ELBOWS, CROSS STREET,
BACKFILL WITH "CDF" USE STEEL JUMP PLATES.

STA 21+00
INSTALL 8x8 MJ FLG TEE, 6" FLOW MJ GATEVALVE,
CUT INTO 4" WATERLINE AND INSTALL CAP AT
THE NORTH END OF TEE. INSTALL 8" MJ GATEVALVE
AT STA 23+15 AND CONNECT TO STA 21+00.
EXISTING 4" LINE BETWEEN STA 21+00 TO 23+15
CAN THEN BE REMOVED.

STA 21+00
UPON COMPLETION OF TESTING, EXTEND 25'-FT
OF 6" PVC PIPE AND CONNECT TO EXISTING 6" PVC
WATERLINE, CHLORINE DISINFECT WATERLINE PARTS.

STA 19+85
INSTALL TYPICAL FIRE HYDRANT
ASSEMBLY

CONSTRUCT 8" PVC
WATERMAIN 16"-24" FROM
EDGE OF ASPHALT

WATER SERVICE
TO CROSS STREET

WATER SERVICE
TO CROSS STREET

WATER SERVICE
TO CROSS STREET

STA 14+85
INSTALL TYPICAL FIRE HYDRANT
ASSEMBLY

CONSTRUCT 8" PVC
WATERMAIN 16"-24" FROM
EDGE OF ASPHALT

CONSTRUCT 8" PVC
WATERMAIN AT LOCATION OF
EXISTING 4" WATERLINE

EXISTING 4" WATERLINE

EXISTING 6" WATERLINE

MATCH LINE
PAGE 5 OF 17

MATCH LINE
PAGE 3 OF 17

NORTHWEST CORNER
CALLENDER D.L.C.



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CITY OF WARRENTON
SURF PINES WATER DISTRICT

JB RANKIN ENGINEERING Inc.
P.O. BOX 187 WARRENTON, OR. 97146
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PHASE-1
MANION DRIVE WATERLINE UPGRADE

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FILE: SURF0713

SCALE 1" = 30'

STA 21+00
INSTALL 8x6 MUXFLG TEE, 6" FLOWMJ GATEVALVE.
CUT INTO 4" WATERLINE AND INSTALL CAP AT
THE NORTH END OF TEE. INSTALL 8" MJ GATEVALVE
AT STA 23+15 AND CONNECT TO STA 21+00.
EXISTING 4" LINE BETWEEN STA 21+00 TO 23+15
CAN THEN BE REMOVED.

STA 20+65 TO STA 20+90
INSTALL 8" MJ 45° ELBOWS, CROSS STREET,
BACKFILL WITH "CSF" USE STEEL JUMP PLATES.

CONSTRUCT 8" PVC
WATERMAIN AT LOCATION OF
EXISTING 4" WATERLINE

STA 23+15 END PHASE-1
EXISTING 8" WATERMAIN ENDS WITH A
GATEVALVE AND 8x4 REDUCER. INSTALL
NEW 8" MJ GATEVALVE AND CONNECT TO
NEW 8" WATERMAIN.

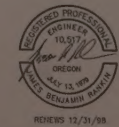
SURF PINES LANDING

MANION DRIVE

LUCAS DRIVE

HORIZON LANE

MATCH LINE
PAGE 4 OF 17



CITY OF WARRENTON
SURF PINES WATER DISTRICT

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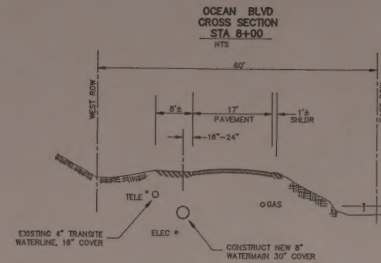
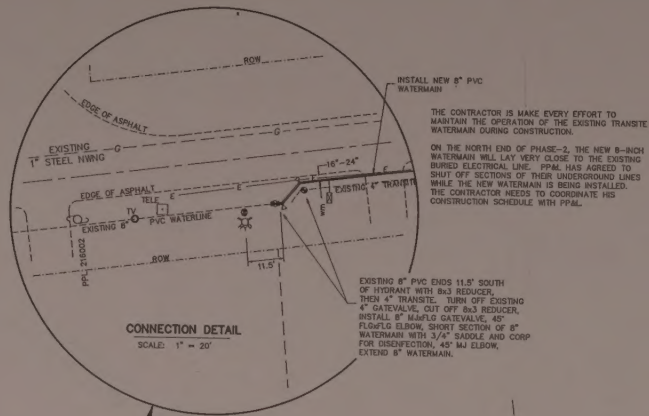
PHASE-1
MANION DRIVE WATERLINE UPGRADE

REVISIONS 12/31/98

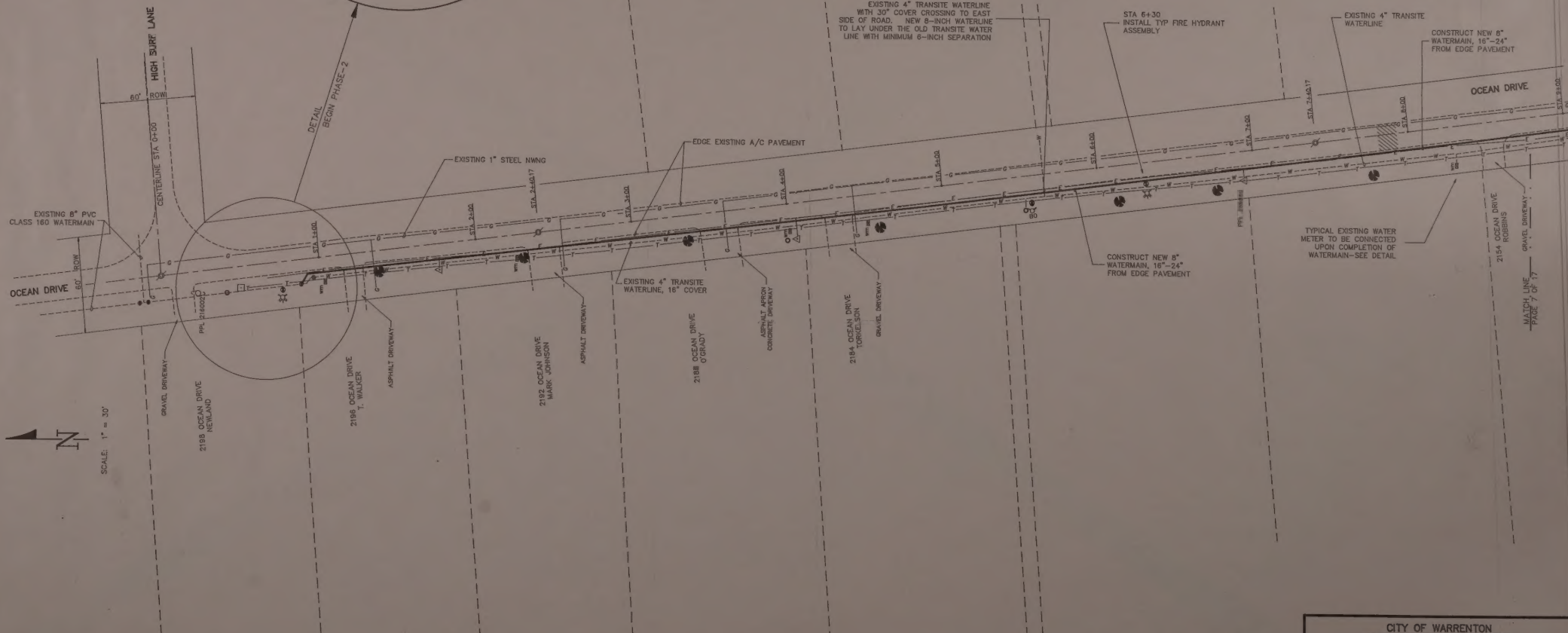
PAGE 5 OF 17

4/13/98

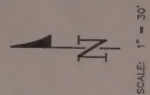
D.F.



NOTE:
ON THE NORTH END OF PHASE-2, THE NEW 8-INCH WATERMAIN WILL LAY VERY CLOSE TO THE EXISTING BURIED ELECTRICAL LINE. PPAL HAS AGREED TO SHUT OFF SECTIONS OF THEIR UNDERGROUND LINES WHILE THE NEW WATERMAIN IS BEING INSTALLED. THE CONTRACTOR NEEDS TO COORDINATE HIS CONSTRUCTION SCHEDULE WITH PPAL.

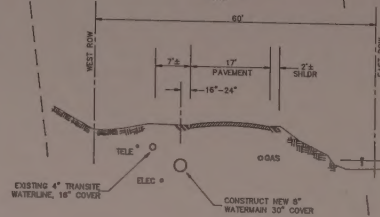


CITY OF WARRENTON SURF PINES WATER DISTRICT
JB RANKIN ENGINEERING Inc. P.O. BOX 187 WARRENTON, OR. 97146 (503) 861-0779
PHASE-2 OCEAN DRIVE WATERLINE UPGRADE

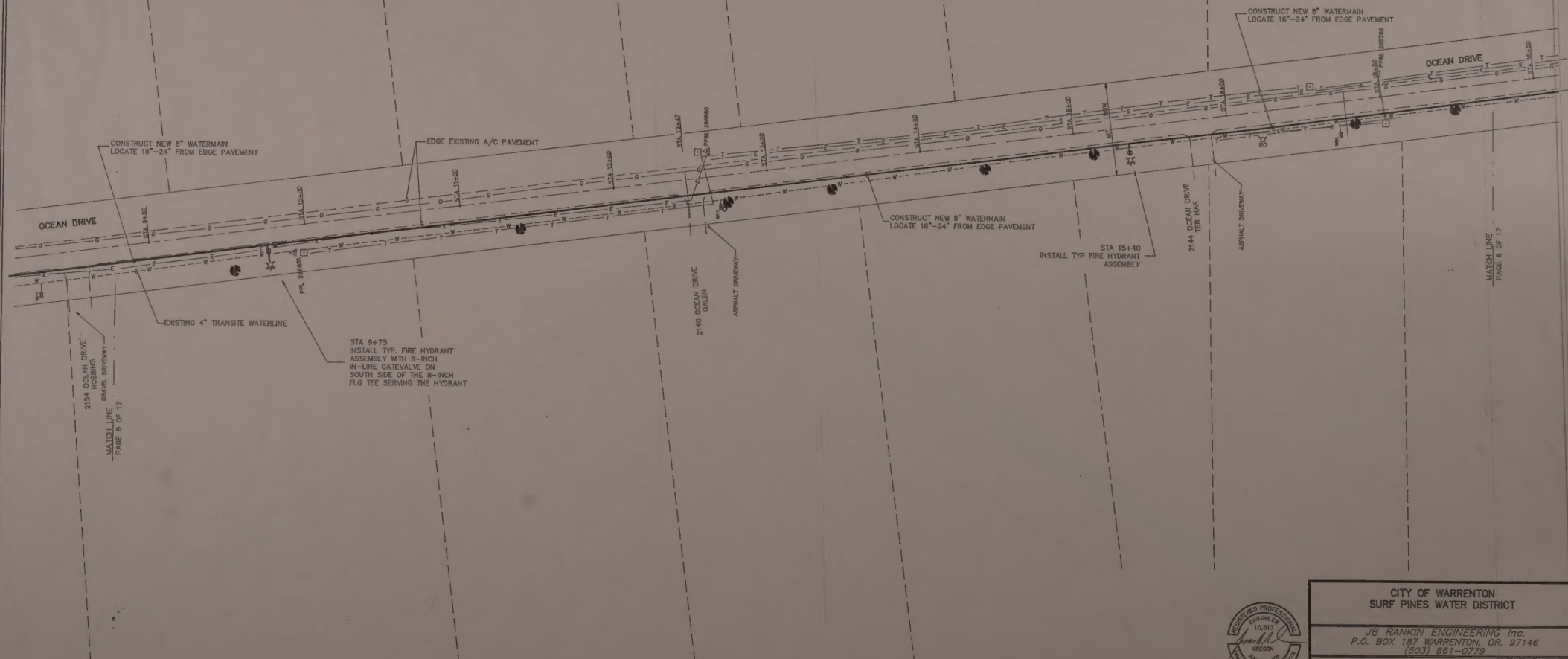
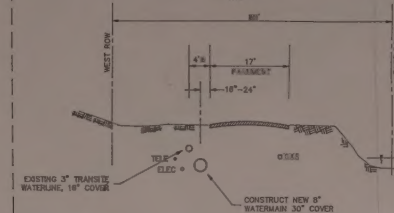


SCALE: 1" = 30'

OCEAN BLVD
CROSS SECTION
STA 11+00
NTS



OCEAN BLVD
CROSS SECTION
STA 16+00
NTS

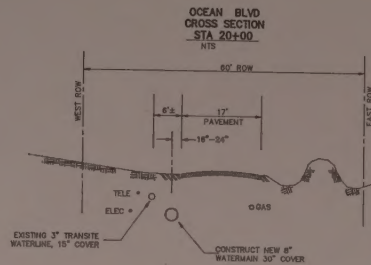


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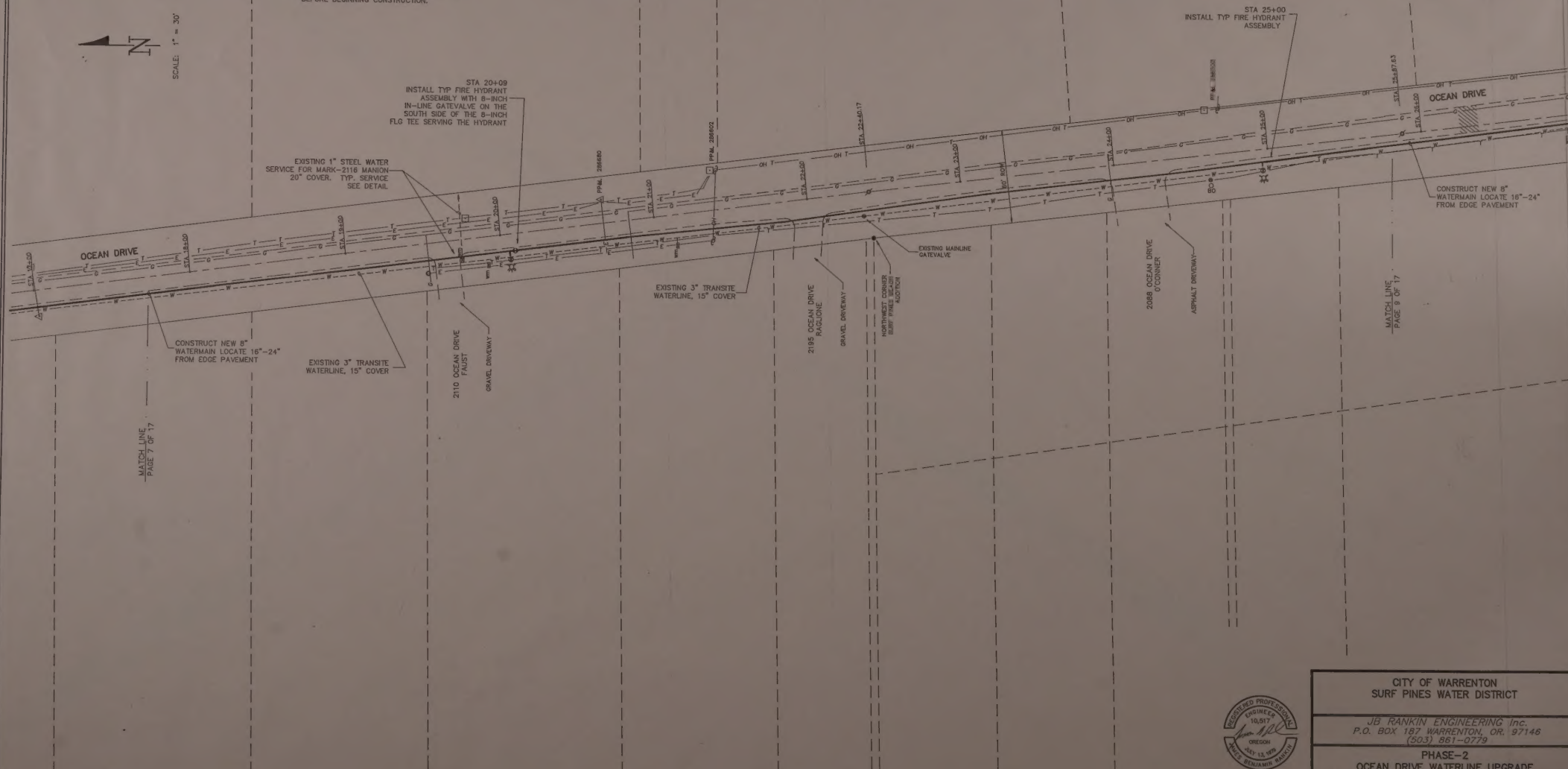
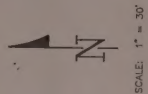
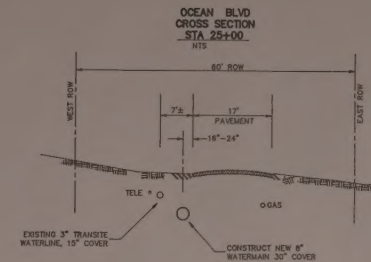
CITY OF WARRENTON
SURF PINES WATER DISTRICT

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P.O. BOX 187 WARRENTON, OR. 97146
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PHASE-2
OCEAN DRIVE WATERLINE UPGRADE



NOTE: UTILITIES ARE SHOWN FOR REFERENCE ONLY, CONTRACTOR TO CALL FOR LOCATES BEFORE BEGINNING CONSTRUCTION.



CITY OF WARRENTON
SURF PINES WATER DISTRICT

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PHASE-2
OCEAN DRIVE WATERLINE UPGRADE

REVISIONS 12/31/98

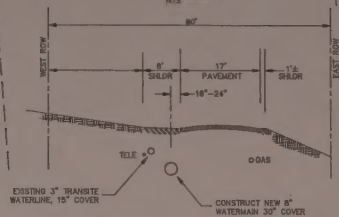
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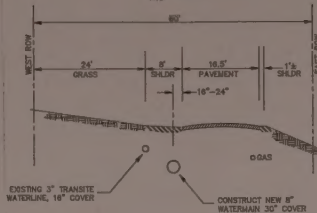
FILE: SURF974

SCALE: 1" = 30'

OCEAN BLVD
CROSS SECTION
STA 28+00
RTS

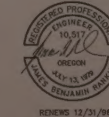
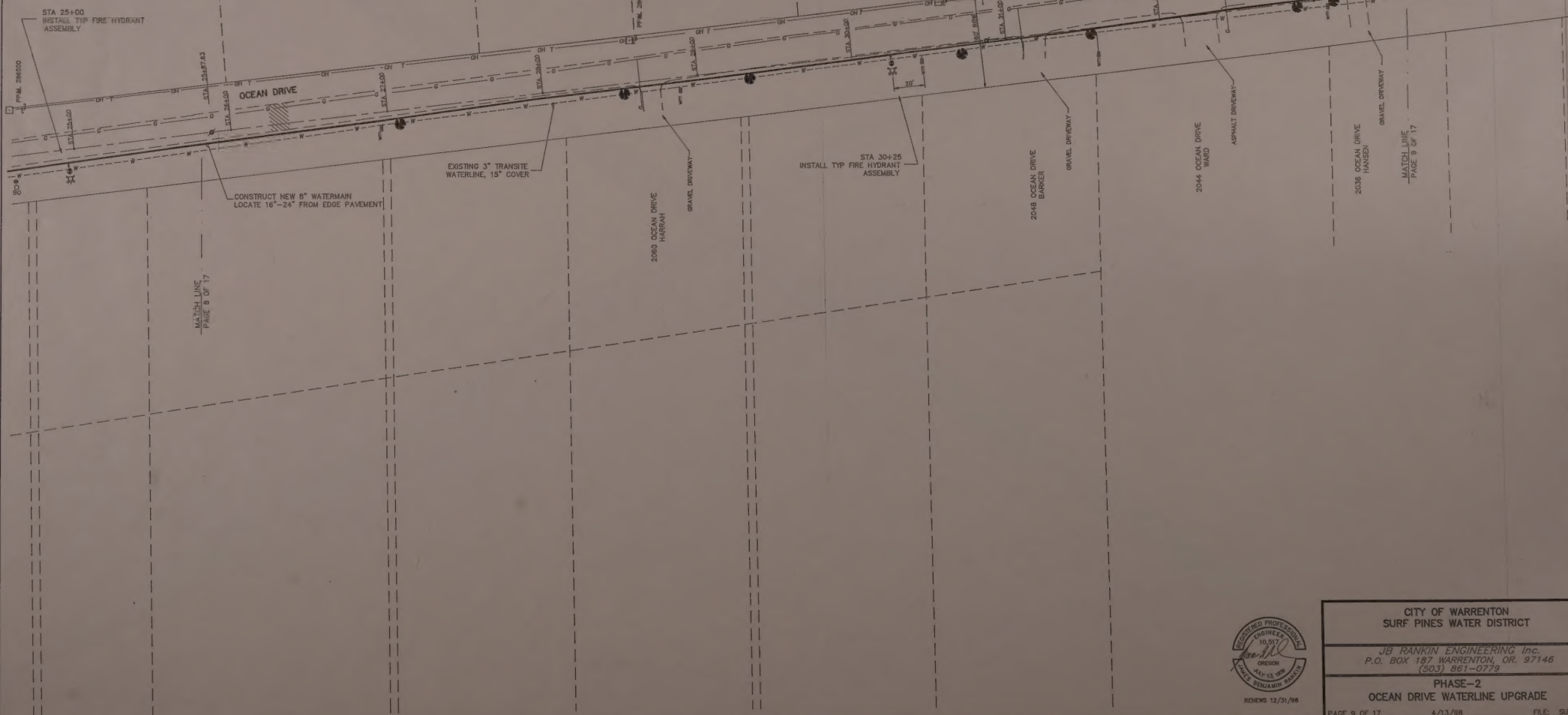


OCEAN BLVD
CROSS SECTION
STA 30+50
RTS



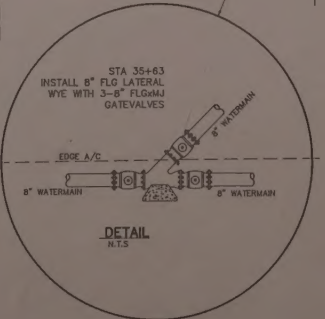
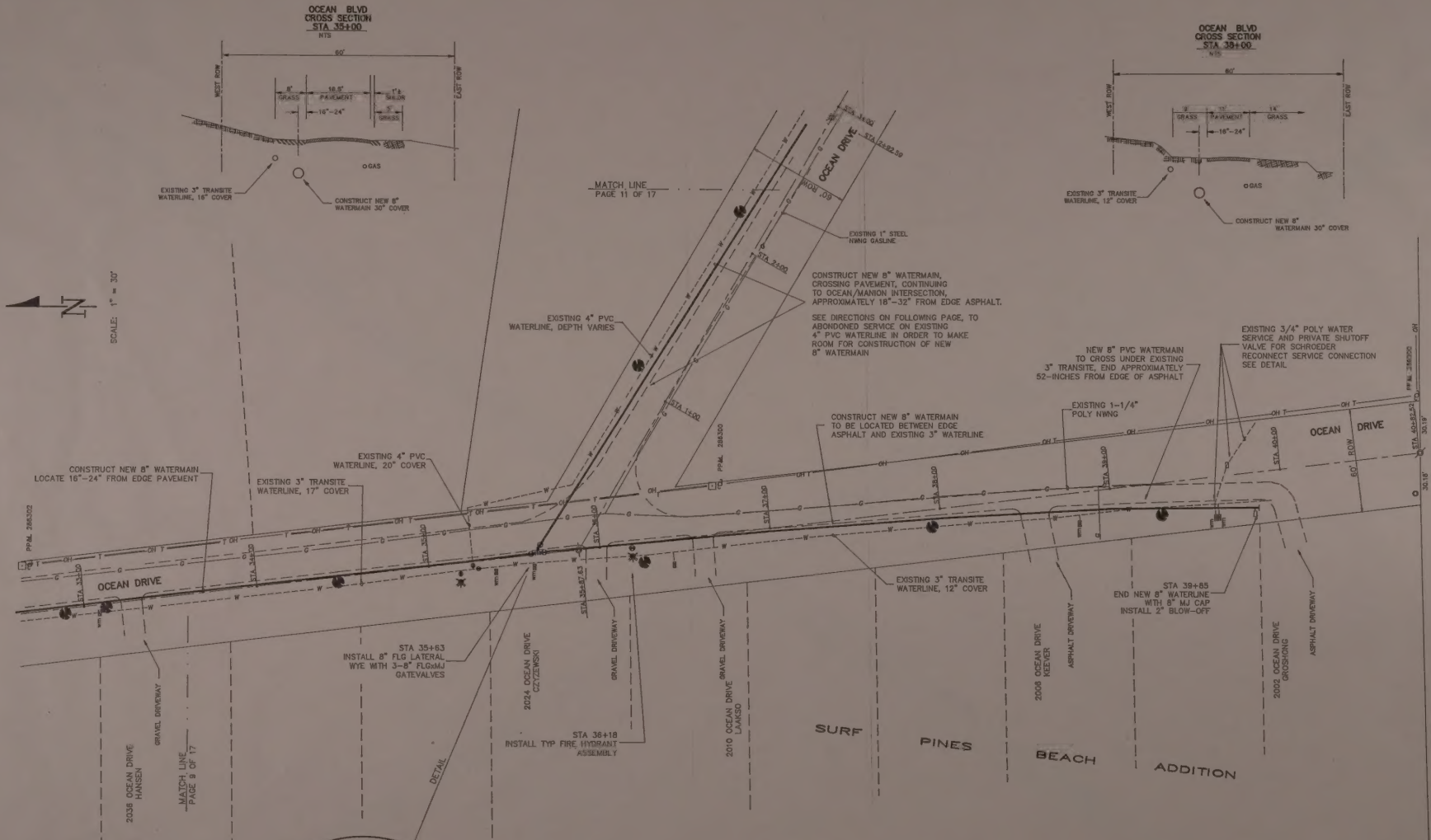
NOTE: UTILITIES SHOWN FOR REFERENCE ONLY. CONTRACTOR TO CALL FOR LOCATES BEFORE BEGINNING CONSTRUCTION.

STA 25+00
INSTALL TYP FIRE HYDRANT ASSEMBLY

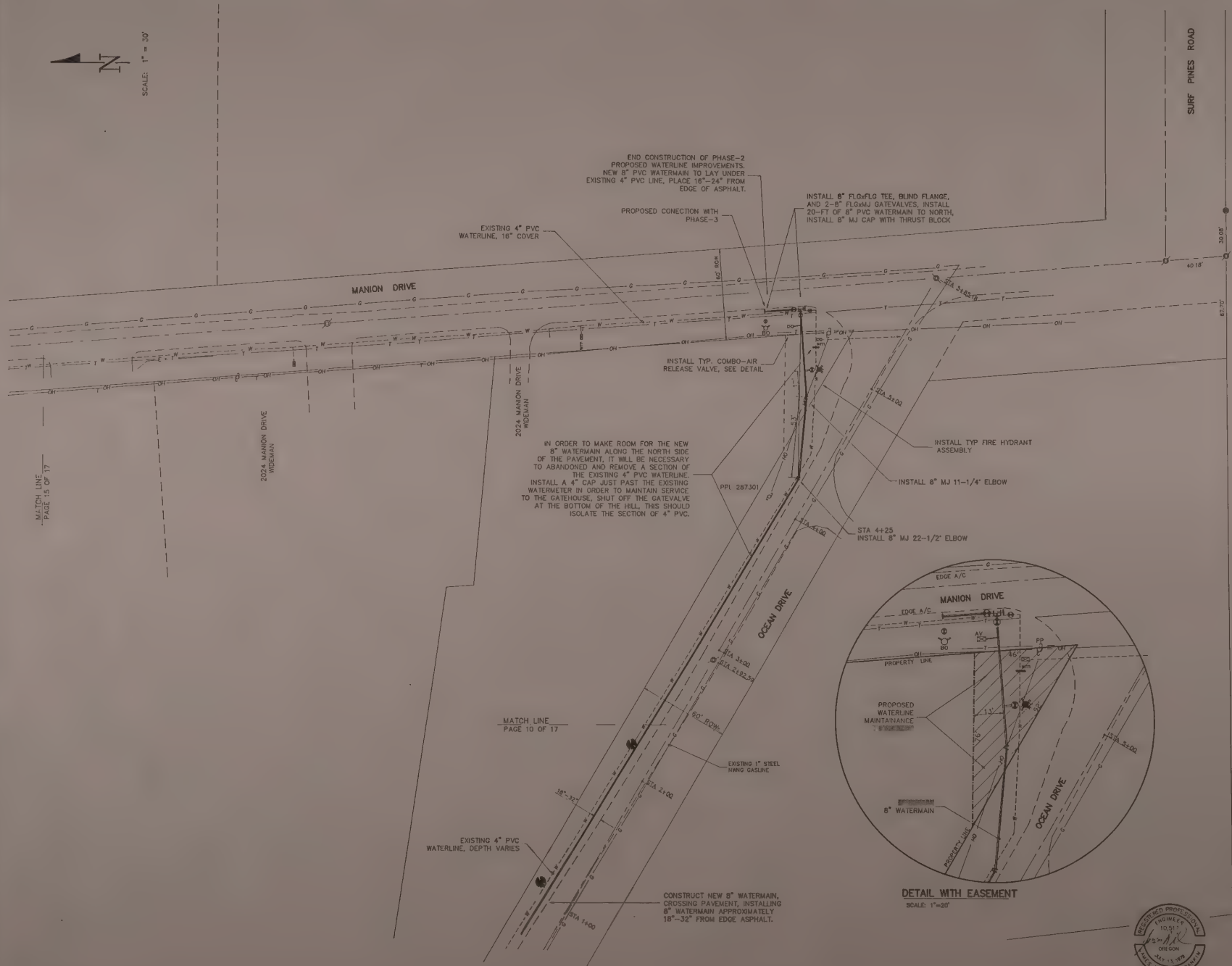


CITY OF WARRENTON SURF PINES WATER DISTRICT	
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PHASE-2 OCEAN DRIVE WATERLINE UPGRADE	
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FILE: SURF975



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PHASE-2 OCEAN DRIVE WATERLINE UPGRADE	
REVISIONS 12/31/98	FILE: SURF978



IN ORDER TO MAKE ROOM FOR THE NEW 8" WATERMAIN ALONG THE NORTH SIDE OF THE PAVEMENT, IT WILL BE NECESSARY TO ABANDONED AND REMOVE A SECTION OF THE EXISTING 4" PVC WATERLINE. INSTALL A 4" CAP JUST PAST THE EXISTING WATERMETER IN ORDER TO MAINTAIN SERVICE TO THE GATEHOUSE. SHUT OFF THE GATEVALVE AT THE BOTTOM OF THE HILL. THIS SHOULD ISOLATE THE SECTION OF 4" PVC.

INSTALL 8" FLOW TEE, BLIND FLANGE, AND 2-8" FLOW GATE VALVES. INSTALL 20'-0" OF 8" PVC WATERMAIN TO NORTH. INSTALL 8" MJ CAP WITH THRUST BLOCK.

PROPOSED CONNECTION WITH PHASE-3

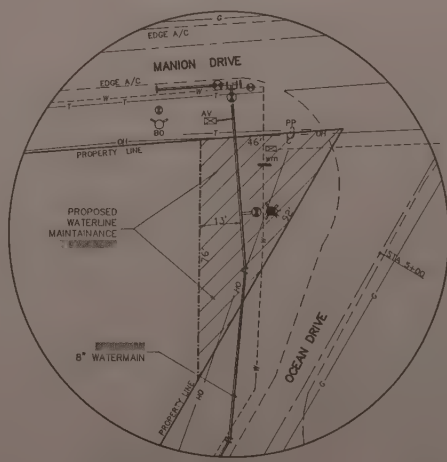
EXISTING 4" PVC WATERLINE, 16" COVER

INSTALL TYP. COMBO-AIR RELEASE VALVE, SEE DETAIL

INSTALL TYP. FIRE HYDRANT ASSEMBLY

INSTALL 8" MJ 11-1/4" ELBOW

STA 4+25
INSTALL 8" MJ 22-1/2" ELBOW



DETAIL WITH EASEMENT

SCALE: 1"=20'

CONSTRUCT NEW 8" WATERMAIN, CROSSING PAVEMENT. INSTALLING 8" WATERMAIN APPROXIMATELY 18"-32" FROM EDGE ASPHALT.

EXISTING 4" PVC WATERLINE, DEPTH VARIES

EXISTING 1" STEEL HWNG GASLINE

MATCH LINE
PAGE 10 OF 17

MATCH LINE
PAGE 15 OF 17



CITY OF WARRENTON SURF PINES WATER DISTRICT	
JB RANKIN ENGINEERING, Inc. P.O. BOX 187 WARRENTON, OR. 97146 (503) 861-0779	
PHASE-2 OCEAN DRIVE WATERLINE UPGRADE	
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SCALE: 1" = 30'

2187 MANION DRIVE
SPWD

EXISTING 6" WATERLINE

EXISTING 6" WATERLINE

EXISTING 8" WATERMAIN

MANION DRIVE

EXISTING 2" WATERLINE

2184 MANION DRIVE
WELLER

EXISTING 8" WATERMAIN

2176 MANION DRIVE

EXISTING 8" PVC WATERMAIN

EXISTING FIRE HYDRANT

EXISTING 4" PVC WATERMAIN

NOTE: THIS GATE VALVE SHAN BE USED TO SHUT OFF THE 4" WATERMAIN

STA 6+70
BEGIN CONSTRUCTION WITH CONNECTION TO EXISTING 8" FLG TEE, SEE NEXT PAGE

OLD 4" TRANSITE WATERLINE

2172 MANION DRIVE

NO WORK ON THIS PAGE

HIGH SURF LANE

60' ROW

CENTRAL ST. MAIN

OCEAN DRIVE



REVISED 12/31/98

CITY OF WARRENTON
SURF PINES WATER DISTRICT

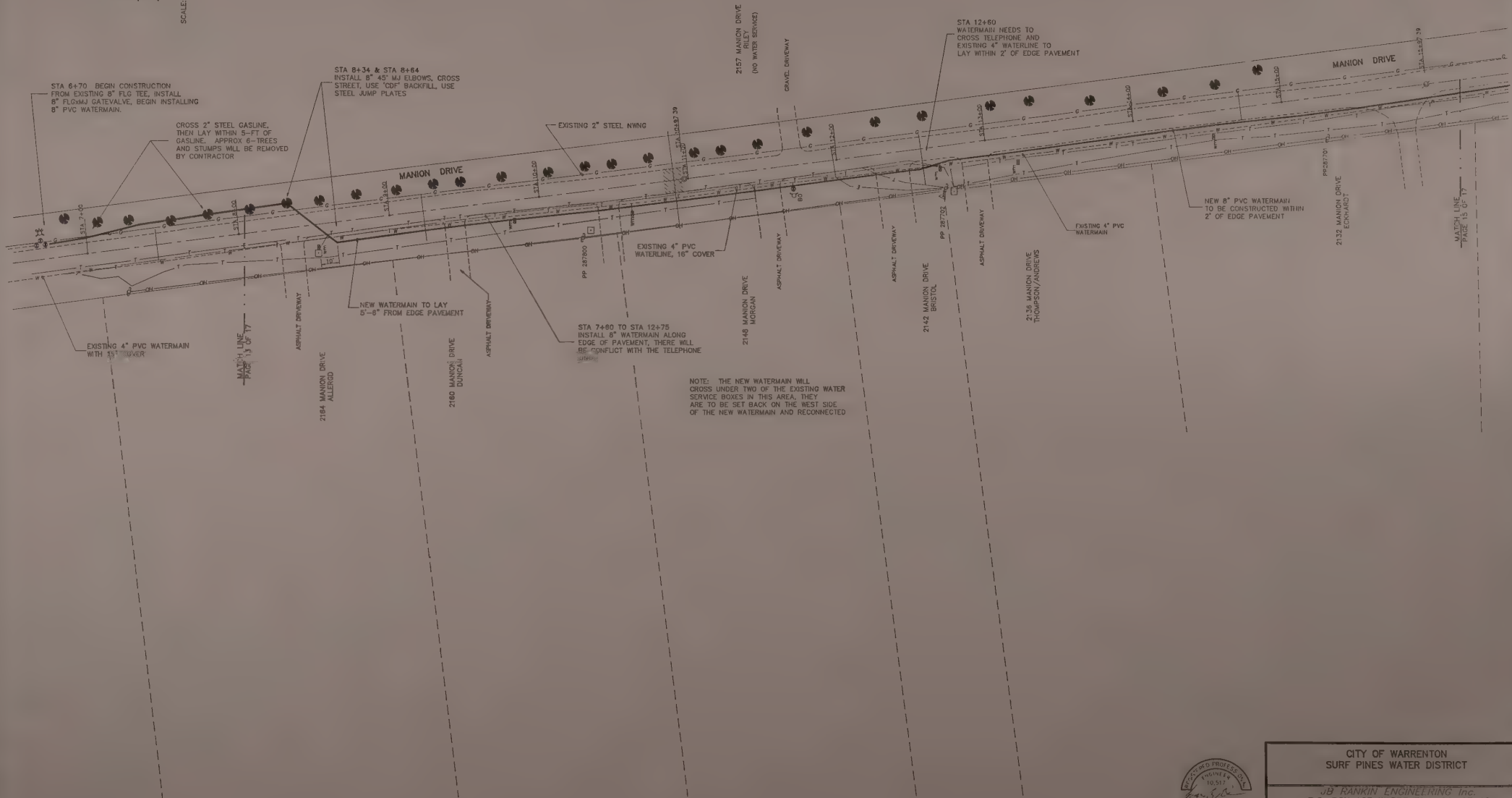
JB RANKIN ENGINEERING Inc.
P.O. BOX 187 WARRENTON, OR. 97146
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PHASE-3
MANION DRIVE WATERLINE UPGRADE

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FILE: SURF-3712



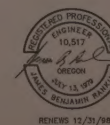
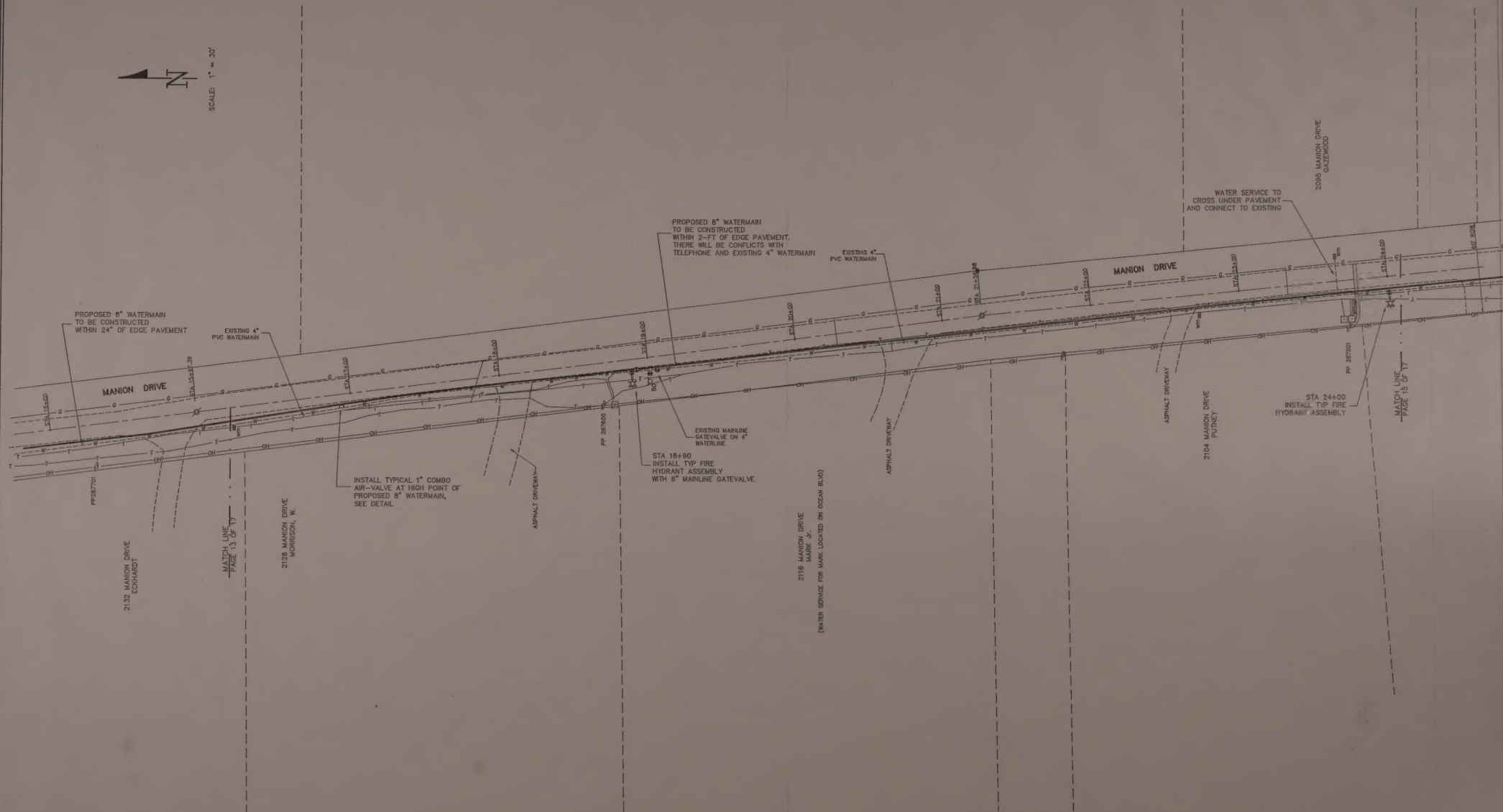
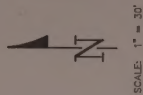
REVISIONS: 12/31/99

CITY OF WARRENTON
SURF PINES WATER DISTRICT

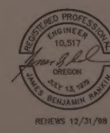
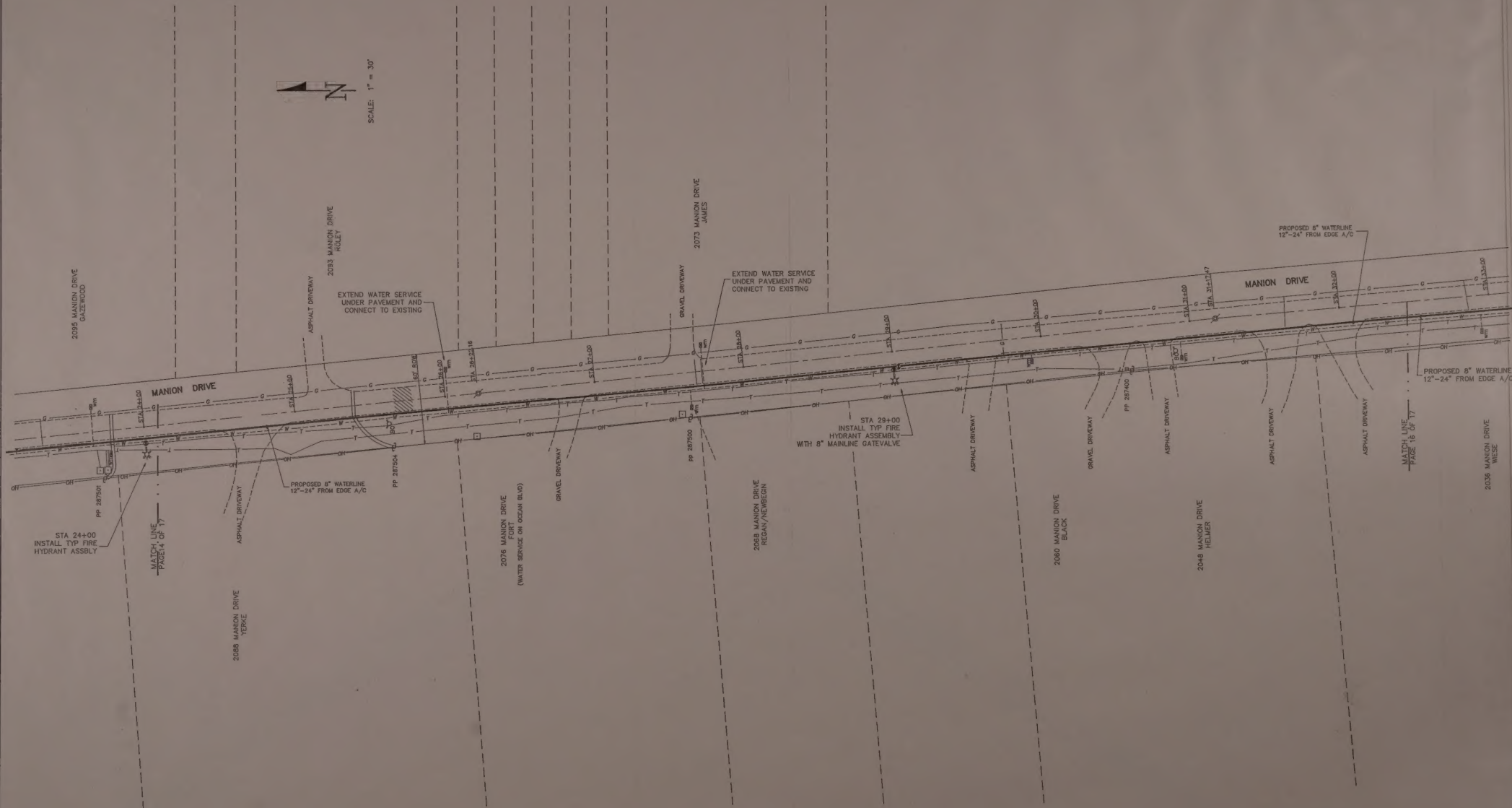
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PHASE-3
MANION DRIVE WATERLINE UPGRADE

FILE: SURF9711

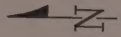


CITY OF WARRENTON SURF PINES WATER DISTRICT	
JB RANKIN ENGINEERING Inc. P.O. BOX 187 WARRENTON, OR. 97146 (503) 861-0779	
PHASE-3 MANION DRIVE WATERLINE UPGRADE	
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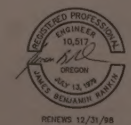
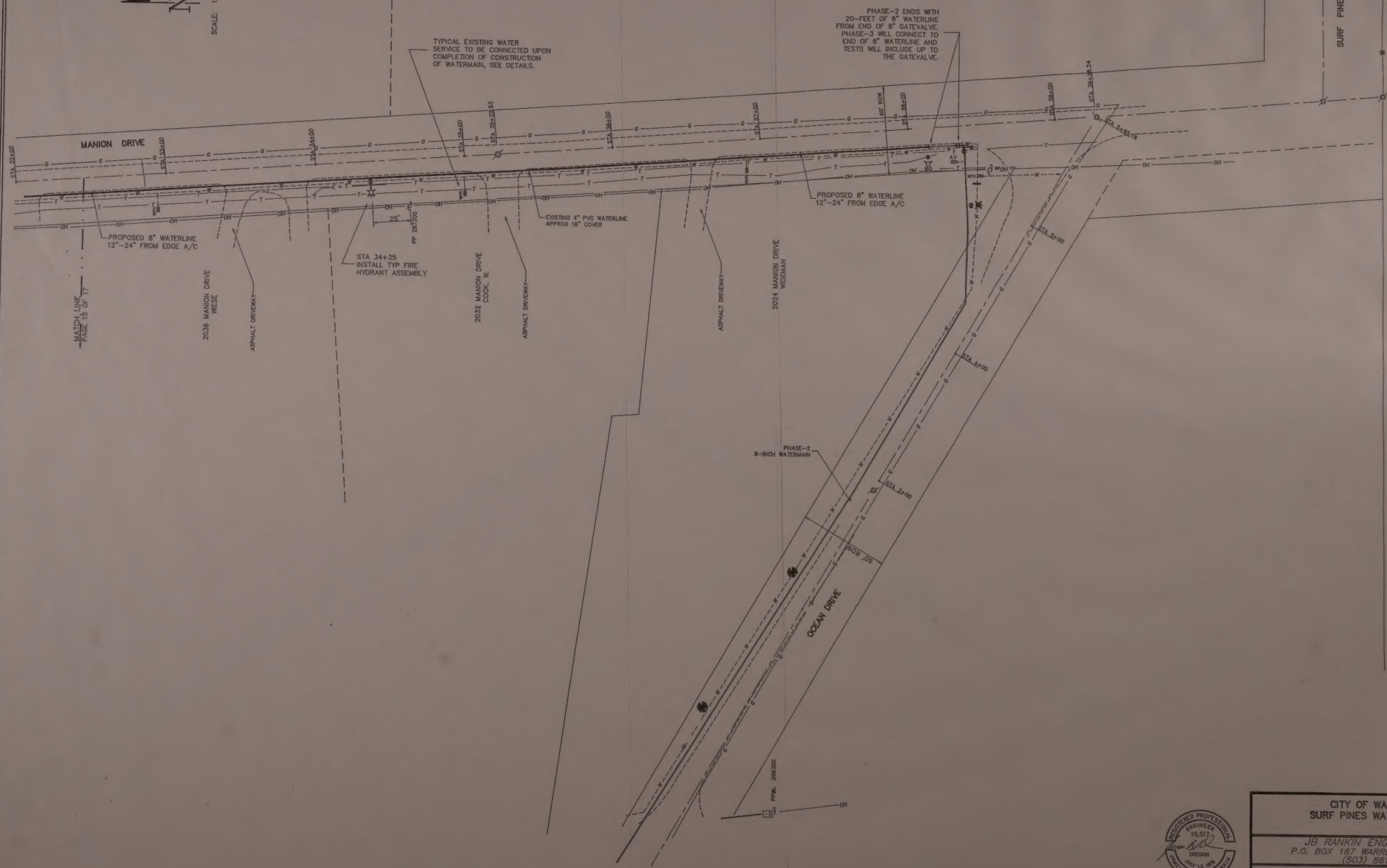


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CITY OF WARRENTON SURF PINES WATER DISTRICT	
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PHASE-3 MANION DRIVE WATERLINE UPGRADE	
PAGE 15 OF 17	FILE: SURF979



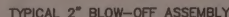
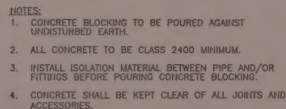
SCALE: 1" = 30'



CITY OF WARRENTON SURF PINES WATER DISTRICT	
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PHASE-3 MANION DRIVE WATERLINE UPGRADE	
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NOTES:
 ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND A CORRECTED SOIL BEARING STRESS OF 1500 PSF. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:

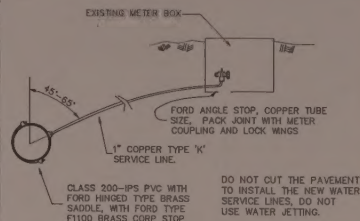
$$\text{BEARING AREA} = (\text{TEST PRESSURE} / 150) \times (\text{TABLE VALUE})$$



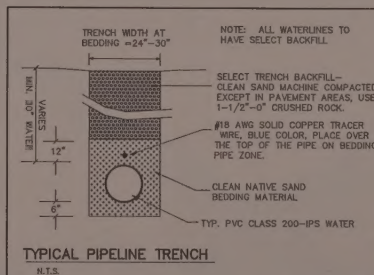
NTS (SEPARATE PAY ITEM)

UPON COMPLETION OF THE TESTING, DISENFECTION, FLUSHING, AND BACT SAMPLE, THE CONTRACTOR SHALL CONNECT THE NEW SERVICE LINE ASSEMBLIES TO THE EXISTING SERVICES, USING ADAPTERS AS REQUIRED. RELOCATION OF EXISTING WATER METERS MAY BE REQUIRED DUE TO THE PLACEMENT OF THE NEW WATERMAIN.

CONTRACTOR TO COORDINATE SHUTTING OFF WATER SERVICE WITH THE HOME OWNERS.



NTS (SEPARATE PAY ITEM)



CONSTRUCTION NOTES:

ALL TRENCHING WITHIN THE PAVEMENT AREA WILL REQUIRE BACKFILL TO BE THOROUGHLY COMPACTED TO MINIMIZE SETTLEMENT. BACKFILL WITH 1-1/2"-0" CRUSHED ROCK AND COMPACT WITH A "HOE-PAC" COMPACTOR IN MAXIMUM 24-INCH LIFTS. COMPACTATION UNDER PAVEMENT AREAS AND WITHIN 5-FT OF EDGES OF PAVEMENT TO BE 95% STANDARD PROCTOR, IN OTHER AREAS COMPACT TO BE MINIMUM 90% STANDARD PROCTOR.

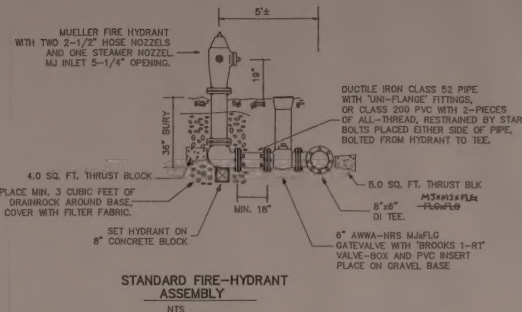
STREET CROSSINGS (OPEN TRENCHING) WITH THE WATERMAIN SHALL REQUIRE BACKFILL WITH CONTROL DENSITY FILL, CDF, CONSISTING OF CONCRETE/FLYASH/CRUSHED ROCK. CDF MIX DESIGNS TO BE SUBMITTED TO CITY FOR APPROVAL PRIOR TO INSTALLATION. CDF TO BE PLACED UP TO A LEVEL TO ALLOW FOR THE FINAL 2-INCHES OF HOT ASPHALT REPAIR. STEEL JUMP PLATES TO BE USED TO PROTECT TRENCH RESTORATION WORK.

ASPHALT REPAIRS TO TRENCHING AREAS SHALL CONSIST OF SAW-CUTTING BACK 12-INCHES BEYOND THE DAMAGED AREAS, PLACING 2-INCHES CLASS "C" ASPHALT MIX, FINISH SURFACE OF WHICH SHALL MATCH EXISTING PAVEMENT.

SHOULDER AREAS AND GRAVEL DRIVEWAYS DAMAGED BY CONSTRUCTION
TO BE RESTORED AS "GOOD OR BETTER". IN GRAVEL AREAS PLACE
MINIMUM 8-INCHES OF COMPACTED 1-1/2"-0" CRUSHED ROCK.

ALL ASPHALT SURFACED DRIVEWAY AREAS TO BE BACKFILLED
WITH 1-1/2"-0" CRUSHED ROCK, AND COMPACTED.

TRENCH AREAS, EXCEPTING THE LAST 10- FEET, TO BE BACKFILLED AT THE END OF THE DAY. CLEAN-UP SHALL BE AN ON-GOING DAILY PROCESS.



INDICATES MONTAGNE FOUND AS NOTED HEREIN USED FOR CONTROL

INDICATES CENTERLINE MOVEMENT FROM SURVEY 8-10507 FOUND AND FIELD

NOTE: ALL VALUES SHOWN ARE RECORD VALUES FROM MAP 8-10507

INDICATES UNDERGROUND ELECTRIC LINES

INDICATES OVERHEAD ELECTRIC LINES

INDICATES UNDERGROUND GAS LINES

INDICATES UNDERGROUND TELEPHONE LINES

INDICATES UNDERGROUND WATER LINES

INDICATES UNDERGROUND CABLE TELEVISION LINES

INDICATES LOCATED TREE

INDICATES EXISTING CABLE TELEVISION PEDESTAL

INDICATES EXISTING POWER POLE

INDICATES EXISTING POWER VAULT

INDICATES EXISTING TELEPHONE PEDESTAL

INDICATES EXISTING WATER VALVE

INDICATES EXISTING GAS VALVE

INDICATES EXISTING TELEVISION BLOW-OFF

INDICATES EXISTING WATER METER TO BE
RECONNECTED AND MAY REQUIRE RELOCATION

CONSTRUCTION NOTES:

ALL WORK IS TO BE INSPECTED BY CITY'S REPRESENTATIVE.
THE CONTRACTOR TO MAKE ARRANGEMENTS FOR INSPECTIONS
DO NOT COVER WITHOUT AN INSPECTION.

CONSTRUCTION OF DOMESTIC WATERLINES TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE APWA STANDARD SPECIFICATIONS, AND THE ADMINISTRATIVE RULES ADOPTED BY THE STATE OF OREGON DEPARTMENT OF HUMAN RESOURCES-HEALTH DIVISION, AND THE CITY OF WARRENTON. EXCEPTIONS MAY BE SHOWN BY THE DETAIL DRAWINGS AND/OR NOTES CALLED FOR ON THESE PLANS.

DISINFECTION AND TESTING OF THE WATERLINES REQUIRED PRIOR TO DOMESTIC USE. CLEAN, FLIP, FLUSH AND PRESSURE AND LEAKAGE TEST WATERLINES AS PER AWWA STANDARD C605-94. DISINFECT AS PER AWWA STANDARD C651-82. CHLORINE MIX TO BE INJECTED INTO THE WATERLINE THRU A STANDARD SADDLE AND CORPORATION STOP, AND FLUSHED THRU A FIRE HYDRANT. CONTRACTOR TO PROVIDE TEST RESULTS FROM AN APPROVED TESTING AGENCY OF "NEGATIVE BACT-7 TEST SAMPLE." DISCHARGE OF CHLORINATED WATER MAY BE REGULATED BY THE HEALTH DEPARTMENT AND/OR THE DEQ. CONTRACTOR TO VERIFY.

DO NOT COVER WATERLINES, FIRE HYDRANT ASSEMBLIES OR THRUST BLOCKS WITHOUT AN INSPECTION BY THE DESIGN ENGINEER OR THE CITY OF WARRENTON. MAKE SCHEDULING ARRANGEMENTS FOR INSPECTIONS.

ALL PIPE MATERIALS, VALVES, ETC. THAT COME IN CONTACT WITH THE WATER SUPPLY MUST HAVE AMERICAN WATER WORKS ASSOCIATION AND NATIONAL SANITATION FOUNDATION STANDARD 61 CERTIFICATION ACCORDING TO OAR 333-061-0050

PLAN DISCLAIMER: THESE PLANS DO NOT CONSTITUTE A PROPERTY SURVEY NOR DETERMINE THE BOUNDARY OF OWNERSHIP. THIS WORK IS NOT A LAND SURVEY.

THE GENERAL LOCATION OF UNDERGROUND UTILITIES HAS BEEN SHOWN ON THESE PLANS BY HLB, INC. FOR THE SURF PINES WATER DISTRICT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR THE LOCATION OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION.

THE AREAS DESIGNATED AS "RIGHT-OF-WAY" ON THESE PLANS, ARE UNDER THE OWNERSHIP AND CONTROL OF THE SURF PINES HOMEOWNERS ASSOCIATION.

ALL WATERLINE PIPE MATERIAL AND PARTS SHALL BE "DOMESTIC MADE". ANY AND ALL EXCEPTIONS SHALL MEET WITH THE APPROVAL OF THE CITY OF WARRENTON PRIOR TO DELIVERY TO THE JOB SITE.



REVIEWS 12/31/98

CITY OF WARRENTON
SURF PINES WATER DISTRICT

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WATERLINE DETAILS & NOTES